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Grant A. Johnson
IBM Corporation, Dept. 917
3605 Highway 52 North
Rochester, MN 55901-7829

EXAMINER	
KANG, ROBERT N	

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2622	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/050,385	CRAGUN ET AL.	
	Examiner	Art Unit	
	Robert N. Kang	2622	RNK

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☒ Claim(s) *8 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Page 3, line 11 lacks a period to terminate the end of a sentence.

Appropriate correction is required.

Claim Objections

1. Claim 11 is objected to because of the following informalities: the word "comparing" in line 2 before scanning appears to be a typo. For the purposes of this action, the examiner assumes the claim should read: "comprises scanning a first copy of the first image, storing the first copy of the first image in a storage device, scanning a copy of the first image, and comparing the second copy of the first image to the first copy of the first image." Appropriate correction is required.

2. Claim 8 is objected to because of the following informalities: the method step "capturing a second image of a second paper document" does not specify that the first and second papers are different copies of the same document. By the current wording, any two pages could be scanned and compared to detect the presence of handwritten notations; this subtraction would result in vast differences and a misidentification of handwritten notations if the two pages are not copies of the same document. Additionally, the second step of claim 8, "detecting whether the second image contains a handwritten notation," has no apparent functional purpose. Claims 9 and 11 state the

detection is carried out by the comparison between image 1 and image 2. Therefore, if a figure or image was improperly tagged as a notation in image 1, it would also be improperly tagged as a notation in image 2, but the comparison between images 1 and 2 would correctly yield that no notations were detected. Therefore this step is, to the examiner's understanding, superfluous and confusing. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 2 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification is non-enabling in regards to the method stated in claim 2 of detecting the presence of handwritten notations "using optical character recognition to detect typewritten characters." The specification states on page 8, line 20, "anything not identifiable by the OCR system as a typewritten character would be classified as a handwritten notation." The disclosure does not state how several key issues are overcome by the proposed invention. First, modern OCR algorithms are capable of recognizing a wide array of handwriting, particularly if the author block printed or is fairly

neat. Secondly, figures and images are generally unrecognizable to OCR algorithms, in which case these image elements would be misidentified as handwritten notations. Examiner understands that the method of comparison disclosed in claim 11 is designed explicitly to address said issues; however, claims 2 and 14 alone as disclosed are non-enabling.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 12, 13, 20 rejected under 35 U.S.C. 102(b) as being anticipated by Graf (US-PAT 5,631,984).

In regards to claim 1, Graf discloses a method which scans and compresses a check or other document after isolating the dynamic elements from the preprinted check. Graf states in column 3, lines 65-68, "the term 'document' as used herein therefore includes not only paper documents such as forms, financial instruments, and the like, but more generally any type of information which may be stored or processed in the form of an electronic image." Regarding the first step of the method, "capturing a first image of a first paper document," Graf discloses in column 5, lines 4-8, "the check

10 may be scanned, utilized a scanner 35, in a matter well known in the art, to produce an original full check image 40 which includes the static and dynamic portions identified above." Graf defines the dynamic portion of the document in column 4, line 9, stating, "a dynamic portion, such as added handwritten text, is a portion which may be distinct from document to document." Thus the dynamic portion qualifies as a handwritten notation. Finally, Graf discloses in column 5, lines 54-55, "the handwritten dynamic portion of the original check image 40 is identified and then isolated from the preprinted static portion." Thus Graf's patented method meets the requirements for the second step of the pending method, "detecting whether the first image contains a handwritten notation."

Regarding claim 13, "a copying apparatus for documents ... comprising a scanner...[and] a processor configured to determine whether the image of the first document contains a handwritten notation," Graf's claims in claim 15, "an apparatus for use in a document image processing system." A copying apparatus or photocopier falls under the category of image processing apparatuses, and thus is anticipated by the Graf patent. Additionally, Graf discloses in claim 15, line 40, "a means for receiving a first electronic image of a substantially complete document." In regards to receiving an image of the document, Graf states in column 5, lines 4-8, "the check 10 may be scanned, utilized a scanner 35, in a matter well known in the art, to produce an original full check image 40 which includes the static and dynamic portions identified above." Therefore Graf's invention possesses "a scanner for capturing an image of a first document." Finally, Graf describes in claim 15, line 44, a "means for identifying a

portion of the first electronic image which corresponds to a portion of the added information." The 'added information' refers to the "handwritten dynamic portion" disclosed in column 5, lines 54-55, whereas, broadly defined, the identifying means encompasses the processor claimed in claim 13, line 4. Because the processor as disclosed by the applicant and the "identifying means" as disclosed by Graf carry out the same function of identifying the presence of handwritten information, claim 13, limitation 2, "a processor configured to determine whether the image of the first document contains a handwritten notation," is expressly anticipated by Graf.

In regards to claim 20, a "computer program configured to perform" the method as disclosed in claim 1, because the method is anticipated by Graf, the software containing said method would also be unpatentable over Graf.

Regarding claim 12, "wherein detecting whether the first image contains handwritten notations comprises detecting color differences in the image," Graf discloses in figures 4 and 5 a method of extracting the handwritten portions by various image transforms to determine a color spectrum range of the handwritten text, as shown in step 500. By filtering out image components outside the color spectrum range in step 502, the handwritten ink can be detected and extracted. Graf further states in column 9, lines 7-11, "since the name and address are typically printed with the same ink, their color will show up in the histogram as a prominent peak. The image data can then be thresholded to make only this color visible and thereby extract the printed text." Since extracting the handwritten text occurs simultaneously with an accurate detection of the

text, and the extraction is based upon color differences in the first image, Graf's patented system anticipates the method as disclosed in claim 12.

Claim Rejections - 35 USC § 103

8. Claims 8, 9, 11, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Gonzales (reference U).

As stated earlier in this action, Graf discloses a method which scans and compresses a check or other document after isolating the dynamic elements from the preprinted check. Graf states in column 3, lines 65-68, "the term 'document' as used herein therefore includes not only paper documents such as forms, financial instruments, and the like, but more generally any type of information which may be stored or processed in the form of an electronic image." Regarding the first step of the method, "capturing a first image of a first paper document," Graf discloses in column 5, lines 4-8, "the check 10 may be scanned, utilized a scanner 35, in a matter well known in the art, to produce an original full check image 40 which includes the static and dynamic portions identified above." Graf defines the dynamic portion of the document in column 4, line 9, stating, "a dynamic portion, such as added handwritten text, is a portion which may be distinct from document to document." Thus the dynamic portion qualifies as a handwritten notation. Finally, Graf discloses in column 5, lines 54-55, "the handwritten dynamic portion of the original check image 40 is identified and then isolated from the preprinted static portion." Thus Graf's patented method meets the requirements for the second step of the pending method, "detecting whether the first

image contains a handwritten notation." Therefore the limitations of the independent claim 1 are met.

Graf does not expressly disclose a method of determining whether a document has handwritten notations by receiving two copies of the same original document after handwritten notations have or have not been added by comparing the two images.

Gonzales on page 465, paragraph 4, states "one of the simplest approaches for detecting changes between two image frames f(x, y, Ti) and f(x, y, Tj) taken at times Ti and Tj, respectively, is to compare the two images pixel by pixel. One procedure for doing this is to form a difference image. A difference image between two images take at times Ti and Tj maybe defined as

dij(x, y) = 1 if | f(x, y, Tj) – f(x, y, Ti) | > Threshold

dij(x, y) = 0 otherwise"

Graf and Gonzales are combinable because they are both from the field of image processing and image transforms. Furthermore, the techniques cited in Gonzales are extremely elementary relative to the processes as disclosed by Graf.

Therefore, it would have been obvious at the time of invention to one of ordinary skill in the art to integrate in Graf a method of receiving a second image and comparing it to the first through subtraction to determine any changes in the images as taught by Gonzales. Claims 8 and 11 are inherently met by this modification for the following reasons: 1.) In order to have a second image for comparison, another copy of the document with or without additional markings must be received. Since Graf discloses a scanning operation to capture the first image, it follows that Graf would utilize the same

scanning operation when scanning a separate physical sheet of paper, thereby meeting the requirements of claim 8. 2.) To compare an image pixel by pixel as taught by Gonzales, image data must be retained in order to perform the necessary subtraction. For image data to be maintained, the intensity values for each pixel must be stored in either a location in physical memory or within registers within a processor cache. In either case, this comprises "storing the first [or second] copy of the first image in a storage device." Thus the entire process in claim 11 is unpatentable over the Graf/Gonzales combination. Therefore, the apparatus claim 18 is met as well, since it follows that the processor carries out the instructions as recited by the method claim.

The motivation for this modification would be to reduce the possibility of incorrectly designating an image or non-OCR readable document object present in both sheets as handwritten notations.

Thus it would have been obvious at the time of invention to combine Graf with Gonzales to achieve the invention disclosed in claims 8, 9, 11, and 18.

9. Claims 3 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Jinnai (US-PAT 5,982,502).

As stated earlier, Graf's patented invention meets the requirements stated in claim 1. Graf discloses a method which scans and compresses a check or other document after isolating the dynamic elements from the preprinted check. Graf states in column 3, lines 65-68, "the term 'document' as used herein therefore includes not only paper documents such as forms, financial instruments, and the like, but more

generally any type of information which may be stored or processed in the form of an electronic image." Regarding the first step of the method, "capturing a first image of a first paper document," Graf discloses in column 5, lines 4-8, "the check 10 may be scanned, utilized a scanner 35, in a matter well known in the art, to produce an original full check image 40 which includes the static and dynamic portions identified above." Graf defines the dynamic portion of the document in column 4, line 9, stating, "a dynamic portion, such as added handwritten text, is a portion which may be distinct from document to document." Thus the dynamic portion qualifies as a handwritten notation. Finally, Graf discloses in column 5, lines 54-55, "the handwritten dynamic portion of the original check image 40 is identified and then isolated from the preprinted static portion." Thus Graf's patented method meets the requirements for the second step of the pending method, "detecting whether the first image contains a handwritten notation."

Graf does not expressly disclose a method step for printing the first image based on the results of a positive identification of handwritten notations.

Jinnai discloses in figure 4 a marking page which is scanned and searched for markings through the reader unit 1 in step 7 of figure 6. The handwritten marks, shown in figure 4, determine the image processing to be performed by the core unit 10 before printing from the printer unit 2. Specifically, form E6 allows the user to specify the number of copies sent to the printer unit. Broadly defined in the context of a fax apparatus, this qualifies as a page number. Jinnai states in column 5, lines 55-58, "reference character E6 indicates a marking area for designating the number of image

files to be outputted." Therefore, the first page is printed if and only if a mark is detected by the image processor in the E6 field of the marking sheet depicted in figure 4.

Graf and Jinnai are combinable because they are both from the field of image processing and printing.

Therefore it would have been obvious to include in Graf's handwriting notation detection system a method step of printing the first image in the document if and only if the system detects a handwritten mark as taught by Jinnai.

The motivation behind this modification would be to automatically print out scanned pages which have been edited by hand by a user.

Therefore it would have been obvious to combine Graf and Jinnai to obtain the invention disclosed in claims 3 and 16.

10. Claims 4, 5, 6, 7, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Jinnai (US-PAT 5,982,502) further in view of Microsoft Corporation Word version 10 (otherwise known as Word 2002).

The Graf/Jinnai combination, which automatically prints out a given page if a handwritten mark is detected in an image file, is thoroughly described in the above rejection and thus not restated for the dependent claims 4 and 7.

With regards to claims 4, 5, and 6, the Graf/Jinnai combination does not expressly "generate location information for the handwritten notation" as disclosed by claim 4, consequently it does not "print the location information" as disclosed by claim 5,

and finally the invention does not "store the location information in memory," as disclosed by claim 6.

Microsoft Corporation's word processing application, Word 2002, also known as Word version 10, was released in 2001. A brief summary of the history and features of the Microsoft Word application can be found at www.wikipedia.org. As shown in reference V, Microsoft discloses a method of tracking changes to a document by "using revision marks, the equivalent of 'redlining' or 'blacklining' in the legal profession, to indicate tracked changes," as disclosed in paragraph 2. These red and black lines, broadly defined, qualify as "location information" because they mark the specific location in a document where changes have occurred. Printing the document while under the change tracking mode also prints these red and black lines on the print media, thus "printing the location information." Furthermore, these red and black lines may be saved with the current version of the document to compare changes to a previous version, thus qualifying as "storing the location information in a memory."

Graf, Jinnai, and Microsoft Word are combinable because they all deal directly with image and document processing as well as indirectly with image and document printing.

Therefore it would have been obvious at the time of invention to one of normal skill in the art to include in Graf/Jinnai a system of tracking document changes as taught by Microsoft Word, using the aforementioned detected handwritten notations as changes.

The motivation behind this modification would be to allow easy and automatic location and indexing of detected handwritten notations; this method would allow the modification of image files whereas the MS-Word system is only compatible with proprietary DOC or text files.

Therefore it would have been obvious to combine Graf/Jinnai with Microsoft Word to obtain the invention as disclosed in claims 4, 5, and 6.

Regarding claims 7 and 15, the exact Graf/Jinnai/Microsoft combination as disclosed in the above rejection is employed.

Paragraph 2 of reference V shows a "blackline" in the margin of a paragraph of text where changes have been detected. It is denoted by the label "changed line." Microsoft Word, when in change tracking mode, automatically places these blacklines in the margins of paragraphs of changed text; an operation parallel with 'blacklining' in the legal industry. Therefore, this comprises "superimposing a margin mark onto the first image adjacent to the handwritten notation."

Graf, Jinnai, and Microsoft Word are combinable because they all deal directly with image and document processing as well as indirectly with image and document printing.

Therefore it would have been obvious at the time of invention to one of normal skill in the art to include in Graf/Jinnai a system of tracking document changes as taught by Microsoft Word, using the aforementioned detected handwritten notations as changes.

The motivation behind this modification would be to allow easy and automatic location and indexing of detected handwritten notations; this method would allow the modification of image files whereas the MS-Word system is only compatible with proprietary DOC or text files.

Therefore it would have been obvious to combine Graf/Jinnai with Microsoft Word to obtain the invention as disclosed in claims 7 and 15.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Microsoft Corporation Word version 10 (otherwise known as Word 2002).

Graf discloses an apparatus which meets the requirement of independent claim 13, as earlier stated in this office action. Graf's patented apparatus does not expressly state that the "processor is configured to generate notation summary information for the document."

Paragraph 3 of the Microsoft Help document V states "when a comment is added word numbers it and records it in a separate comment pane... word tracks each reviewer's comment reference marks in a distinct color." Broadly defined, the numbering and coloring of each comment qualifies as "a notation summary" which is generated by the word processing application, which in turn uses the central processor of the host PC.

Graf and Microsoft Word are combinable because they deal directly with image and document processing as well as indirectly with image and document printing.

Therefore it would have been obvious at the time of invention to one of normal skill in the art to include in Graf a system of tracking document changes as taught by Microsoft Word, using the aforementioned detected handwritten notations as changes.

The motivation behind this modification would be to allow referencing and summary of detected handwritten notations; this method would allow the modification of image files whereas the MS-Word system is only compatible with proprietary DOC or text files.

Therefore it would have been obvious to combine Graf with Microsoft Word to obtain the invention as disclosed in claim 17.

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Gonzales, further in view of Microsoft Corporation Word version 10 (otherwise known as Word 2002).

Examiner asserts that claim 10 is identical to claim 17 except that it depends on dependent claim 8, which requires two scanning processes for two distinct image copies of a single document. Therefore, the Graf/Gonzales combination is required.

The Graf/Gonzales combination as stated in the rejection for claim 8 meets the requirements of a method which performs two scans and two detections for multiple user edited copies of a single document.

The Graf/Gonzales combination does not expressly state that the "processor is configured to generate notation summary information for the document."

Paragraph 3 of the Microsoft Help document V states "when a comment is added word numbers it and records it in a separate comment pane... word tracks each reviewer's comment reference marks in a distinct color." Broadly defined, the numbering and coloring of each comment qualifies as "a notation summary" which is generated by the word processing application, which in turn uses the central processor of the host PC.

Graf, Gonzales, and Microsoft Word are combinable because they deal directly with image and document processing as well as indirectly with image and document printing.

Therefore it would have been obvious at the time of invention to one of normal skill in the art to include in Graf/Gonzales a system of tracking document changes as taught by Microsoft Word, using the aforementioned detected handwritten notations as changes.

The motivation behind this modification would be to allow referencing and summary of detected handwritten notations; this method would allow the modification of image files whereas the MS-Word system is only compatible with proprietary DOC or text files.

Therefore it would have been obvious to combine the Graf/Gonzales combination with Microsoft Word to obtain the invention as disclosed in claim 10.

13. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Jinnai (US-PAT 5,982,502) further in view of Microsoft Corporation Word version 10 (otherwise known as Word 2002).

Examiner asserts that claim 19 is simply a homologation of previous method and/or apparatus claims. Specifically, limitations (a) and (b) are simply a restatement of claim 10, as is the limitation after (c), "wherein the programmable processor is programmed to detect handwritten comments." Furthermore, the limitation, to "generate notation summary for the page based on the detection," is a restatement of claim 17. Similarly, the following claim "superimpose a margin mark adjacent to the handwritten comments," is a restatement of claim 15. Finally, the final limitation, "print[ing] the image of the page only if the page includes at least one handwritten comment," is a simple restatement of claim 16.

The examiner contends that the only difference between the collection of apparatus claims [10, 15, 16, 17] and claim 19 are the following limitations: 1.) The apparatus is "a photocopier" and 2.) Said photocopier comprises (c), a printer coupled to the programmable processor.

With regards to these examiner-labeled limitations, Graf in figure 1 discloses a scanner 35, coupled to an image processor 37, finally coupled to a printer 38. This functionally comprises "a photocopier," even though the technology used may have slight variations from the common photocopy machine. Thus limitation 1 is met. Furthermore, the printer 38 is coupled to the image processor 37 in figure 1 as well. Therefore limitation 2, "a printer coupled to the programmable processor," is also met.

Further explanation of this rejection can be found by referencing the individual rejections for claims 10, 15, 16, and 17, wherein the combinations of prior art and the motivations for such combinations has been exhaustively described.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cullen (US-PAT 5,893,908) discloses a document management system for archiving and retrieval of documents with built in document comparison functionality. Johnson (US-PAT 5,859,935) discloses a method for scanning a document and verifying that the image can be produced by human making marks by hand in a field or form. Shustorovich (US-PAT 6,028,956) discloses a method of determining the location and span of a given object in an image to simplify a classification process. Finally, though patented after the applicant's filling date, Ma (6,940,617) discloses a system for identifying and separating handwritten text from machine printed text in a document.Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert N. Kang whose telephone number is (571) 272-0593. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on (571)272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RNK

TWYLER LAMB
PRIMARY EXAMINER